Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

(DRAFT)
Title V, Operating
Permit: V-08-038
Northpoint Training Center
Burgin, KY 40310
November 21, 2008
Massoud Kayvanjah, Reviewer

SOURCE ID:	21-021-00055
AGENCY INTEREST:	372
ACTIVITY:	APE20080001

SOURCE DESCRIPTION:

Northpoint Training Center, a Justice and Public Safety Cabinet facility located State Road 1896 and Highway 33 in Burgin City of Boyle County, submitted a permit application for operation of their air pollution units on September 26, 2008. None of these units have been previously permitted, and they include four (EU-1 through EU-4) natural gas fired boilers (rated capacity of 65, 42, 24 and 20 MMBtu/hr), with #2 diesel fuel as backup. There are eight diesel fuel emergency generators (two 200 KWH, one 150 KWH, one 125 KWH, two 100 KWH, and two 50 KWH), a spray booth operation, and a carpentry work shop. The spray booth operates annually 520 hours using maximum 132 gallons of spray material. The carpentry workshop operates 1300 hours per year using 800 total board feet wood for manufacturing furniture. Facility has three diesel fuel storage tanks with capacity of 20,000, 10,000 gallons, and 1403 gallons with a total of 42,000 gallons annual throughput. Potential emission of regulated air pollutant nitrogen oxide (NO_x) from Northpoint facility exceeds 100 tons per year. Thus, the facility is classified as a major source under the Title V permit program.

APPLICABLE REGULATIONS:

401 KAR 59:010, New Process Operations, applicable to an emission unit that commenced on or after July 2, 1975.

401 KAR 59:015, New indirect heat exchanger (boiler #4), applicable to an emissions unit with a capacity of less than 250 MMBtu/hr which commenced on or after April 9, 1972.

401 KAR 61:015, Existing indirect heat exchangers (boilers #1- #3), applicable to an emissions unit with a capacity of less than 250 MMBtu/hr, which commenced before April 9, 1972.

40 CFR 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE), commencing construction (order placed date) after July 11, 2005 and manufactured after April 1, 2006.

Emission Unit 01: Three Existing Natural Gas Fired Boilers, with back up #2 fuel oil:

EP 01- Boiler #1, rated capacity: 65 MMBtu/hr, installed 1940;

EP 02- Boiler #2, rated capacity: 42 MMBtu/hr, installed 1970.

EP 03- Boiler #3, rated capacity: 24 MMBtu/hr, installed 1967.

Pursuant to 401 KAR 61:015, Section 4(1), particulate emissions from each unit's stack shall not exceed 0.41 lb/MMBtu, based on a three-hour-average (Region II, 0.41=1.28*131^-0.233).

Pursuant to 401 KAR 61:015, Section 4(3), opacity emissions from each indirect heat exchanger shall not exceed forty (40) percent.

Pursuant to 401 KAR 61:015, Section 4(3)(c), emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations

Pursuant to 401 KAR 61:015, Section 5, sulfur dioxide emissions from each unit's stack shall not exceed 2.55 lb/MMBtu (Region III, 2.55=7.7966*131^-0.2291).

Compliance Demonstration:
The units are assumed to be in compliance with PM, SO_2 and opacity standards while burning natural gas.

Sulfur content of the fuel oil should not exceed 0.05 percent by weight while burning fuel oil, and can demonstrate compliance by vendor certification.

Pursuant to 401 KAR 52:020, Section 26, the permittee shall perform a qualitative visual observation of the opacity of emissions from each stack on a weekly basis and maintain a log of observations. If visible emissions are seen then the opacity shall be determined by using U.S. EPA Reference Method 9. If emissions are in excess of the applicable opacity limit, then an inspection shall be initiated of control equipment for any necessary repairs

Emission Unit 02: **Natural Gas Fired Boiler, with back up #2 fuel oil:**

EP 04- Boiler #4, rated capacity: 20 MMBtu/hr, installed 1980.

Pursuant to 401 KAR 59:015, Section 4(1)(c), particulate emissions from the unit's stack shall not exceed 0.29 lb/MMBtu, based on a three-hour-average (0.29=0.9634*151^-0.2356).

Pursuant to 401 KAR 59:015, Section 4(2)(b), opacity emissions from the indirect heat exchanger shall not exceed twenty (20) percent except that a maximum of forty (40) percent opacity shall be permissible for not more than six consecutive minutes in any sixty consecutive minutes during cleaning the fire box or blowing soot.

Pursuant to 401 KAR 59:015, Section 4(2)(c), emissions from the indirect heat exchanger shall not exceed 20 percent opacity based on a six minute average except during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

Pursuant to 401 KAR 59:015, Section 5(c), sulfur dioxide emissions from the unit's stack shall not exceed 0.98 lb/MMBtu (0.98=7.7223*151^-0.4106)

Compliance Demonstration:
The unit is assumed to be in compliance with PM, SO_2 and opacity standards while burning natural gas.

Sulfur content of the fuel oil should not exceed 0.05 percent by weight while burning fuel oil, and can demonstrate compliance by vendor certification.

Pursuant to 401 KAR 52:020, Section 26, the permittee shall perform a qualitative visual observation of the opacity of emissions from each stack on a weekly basis and maintain a log of observations. If visible emissions are seen then the opacity shall be determined by using U.S. EPA Reference Method 9. If emissions are in excess of the applicable opacity limit, then an inspection shall be initiated of control equipment for any necessary repairs

Emission Unit 03: Existing diesel fuel emergency generators:

Ratings and Installation dates: EP-06, 200 KW, 268 Hp, 1992;
EP-07, 100 KW, 134 Hp 1980;
EP-09, 200 KW, 268 Hp 1980;
EP-10, 50 KW, 67 Hp 1980;
EP-12, 150 KW, 201 Hp 1982.

Each emission unit shall not operate more than 500 hours yearly (12 month rolling total)

Pursuant to 401 KAR 52:020, Section 26, the permittee shall monitor and maintain records of fuel used and the total hours of operation of each generator on a monthly basis and on a consecutive twelve (12) month total.

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Emission Unit 04: Three New Emergency Generators:

Ratings and Installation dates: EP-05, 100 KW, 134 Hp 2008;
EP-08, 50 KW, 67 Hp 2008;
EP-11, 125 KW, 168 Hp 2007.

Each emission unit shall not operate more than 500 hours yearly (12 month rolling total)

Pursuant to 40 CFR 60.4207, diesel fuel used must meet the per-gallon requirements of 40 CFR 80.510(a): 1) Sulfur content. 500 parts per million (ppm) maximum.(2) Cetane index or aromatic content, as follows:(i) A minimum Cetane index of 40; or (ii) A maximum aromatic content of 35 volume percent.

Pursuant to 40 CFR 60.4207, beginning October 1, 2010, diesel fuel used must meet the per-gallon requirements of 40 CFR 80.510(b): (1) Sulfur content.(i) 15 ppm maximum for NR diesel fuel.(ii) 500 ppm maximum for LM diesel fuel. (2) Cetane index or aromatic content, as follows:(i) A minimum Cetane index of 40; or (ii) A maximum aromatic content of 35 volume percent.

Pursuant to 40 CFR 60.4211, the engine must have been certified by the manufacturer according to 40 CFR parts 89 or 94, and the engine must be installed and configured according to the manufacturer's specifications. If the engine has not been certified, the operator must demonstrate compliance according to one of the methods specified in 40 CFR 60.4211(b)(1) through (b)(5).

Pursuant to 40 CFR 60.4205, the emission limit for hydrocarbons is 1.0 gram/bhp-hr.

Pursuant to 40 CFR 60.4205, the emission limit for Nitrogen dioxide is 6.9 gram/bhp-hr.

Pursuant to 40 CFR 60.4205, the emission limit for Carbon Monoxide is 8.5 gram/bhp-hr.

Pursuant to 40 CFR 60.4205, the emission limit for Particulate Matter is 0.4 gram/bhp-hr.

Pursuant to 40 CFR 60.4209, the unit must be equipped with a non-resettable hour meter prior to startup of the engine.

Pursuant to 401 KAR 52:040 Section 23, the fuel consumption and operating hours for each engine shall be monitored on a monthly basis.

Pursuant to 401 KAR 52:040 Section 23, the permittee shall maintain records of the monthly fuel consumption and operating hours for each engine and total them in any consecutive twelve (12) months.

Emission Unit 05 **Paint Spray Booth**

Carpentry shop spray booth for using the following material operating a total of 520 hours/year: 40 gallons/year (263 lb/yr) Lacquer thinner, 20 gallons/year (113 lb/yr) Lacquer, Vinyl Sealer 15 gallons/year (83 lb/yr), Bormide Spray 35 gallons/year (231 lb/yr), Bix Spray-on 8 gallons/year (8 lb/yr), Wiping Satin 9 gallons/year (55 lb/yr), Birch Spray 5 gallons/year (33 lb/yr).

Pursuant to 401 KAR 59:010, Section 3(2), particulate matter emissions into the open air shall not exceed 2.34 pounds per hour based on a three-hour average.

Pursuant to 401 KAR 59:010, Section 3(1), no person shall cause, suffer, allow or permit a continuous emission into the open air from a control device or stack associated with any affected facility, which is equal to or greater than 20 % opacity.

Pursuant to 401 KAR 52:020, Section 26, the permittee shall monitor and maintain records of material used and the total hours of operation on a monthly basis and on a consecutive twelve (12) month total.

Pursuant to 401 KAR 52:020, Section 26, monthly recordkeeping of solvent and surface coating material usage, maintaining current MSDS, and emissions calculations will be the proper methods for demonstrating compliance.

Emission Unit 06 Carpentry Operation
Maximum Continuous Rating: 800 board feet/year (2,662 lbs/yr) 1300 hrs/year: 1985

Pursuant to 401 KAR 59:010, Section 3(2), particulate matter emissions into the open air shall not exceed 2.34 pounds per hour based on a three-hour average.

Pursuant to 401 KAR 59:010, Section 3(1), no person shall cause, suffer, allow or permit a continuous emission into the open air from a control device or stack associated with any affected facility, which is equal to or greater than 20 % opacity.

Pursuant to 401 KAR 52:020, Section 26, the permittee shall monitor and record the wood processed and hours of operation.

Insignificant emission sources:

Above ground diesel fuel storage tanks

EMISSION AND OPERATING CAPS DESCRIPTION:

None

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.